fruit. Five days after inoculation the rotted area of the ripe fruit was 1.2$^{cm}$ in diameter. No infection occurred in the green fruit. Culture characteristics are discussed. Rhizoctonia on the tomato is also discussed, the disease being marked by a chocolate-colored, wrinkled epidermis. The fungus penetrates the cells in all directions, and no conidia are formed. It was isolated and tomatoes were inoculated, resulting in their complete decay in two weeks, both ripe and green fruit. The ripe rot due to *Colletotrichum lycopersici* was studied. The fungus was isolated and inoculations were made, producing four days after infection a diseased area 0.6$^{cm}$ in diameter on either ripe or green fruit. Fusarium of undetermined species and also *F. Solani* Mart. were isolated, used in inoculations, and the culture characters determined.

Miss WALKER[8] discusses and describes a form of Sphaeropsis differing from the ordinary form principally in the size of the spore, the size and thickness of pycnidium, and the absence of the ostiole. The new form seems to be more vigorous as a rot-producer that the old one. Inoculated into apples in every case it produced the characteristic black rot. The author suggests that possibly the variation in size of the spore may be due to the nature of the fruit upon which it is growing.

HEALD[9] briefly describes the various types of barley smuts, with notes on experiments as to the best mode of treatment for their prevention. The following treatments were used: formalin steep, modified formalin steep, hot water treatment, corrosive sublimate steep, copper sulfate steep. The percentage of germination was lessened by all the treatments except the hot water, being reduced 40 per cent. by formalin 1/10, and 70 per cent. by 1/15. The author recommends as the formalin steep one pint to 20–25 gallons of water.

WOLF[10] found *Pestalozzia uvicola* on ripe grapes. It was isolated in pure culture and inoculations made upon the grape, resulting in numerous pustules after proper incubation period. Sections of these pustules showed the characteristic spore, but, contrary to the usual mode of Pestalozzia, the spores were borne in what the author regards as well-defined pycnidia, which structure would be entirely out of accord with the genus or with any of the Melanconiaceae. It is unfortunate that the drawing (p. 71) leads one to infer that the spores are not borne in the true pycnidium, as the author describes, but rather in the cavity resulting from hypertrophy of the surrounding host tissues.—F. L. STEVENS.

**Mold of maple syrup.**—This mold, frequently observed during the past few years, has been ascertained by HEALD and POOL[11] to be *Torula saccharina* and was grown in pure culture on media of varying composition. They conclude that the concentration of the sugar solution in which the fungus was growing

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[8] WALKER, LEVA BELL, A new form of Sphaeropsis on apples.

[9] HEALD, F. D., Seed treatment for the smuts of winter barley.

[10] WOLF, F. A., A rot of grapes due to *Pestalozzia uvicola* Spegaz.

[11] HEALD, F. D., AND POOL, V. W., The mold of maple syrup. 21st Ann. Rep. Univ. Neb. Agric. Exp. Sta. 54. 1908.

had little effect on the size of the spores or hyphae; and that ammonium nitrate can be used to a limited extent as a source of nitrogen, but that it is rather poorer than ammonium tartrate.—F. L. STEVENS.

**The vegetative activity of chromatin.**—DERSCHAU'S[12] results and theoretical views on the vegetative activity of chromatin are interesting. Many granular chromatin substances thrown out of the nucleus into the cytoplasm increase in size, assume spherical forms, and then, becoming oriented at the poles of spindle figure, function as centrosomes. This is regarded as the vegetative activity of the chromatin. His studies cover several forms of higher vascular plants, such as *Fritillaria imperialis*, *Iris germanica*, *Vicia Faba*, *Lilium Martagon*, *Funkia sieboldiana*, and *Osmunda regalis*. From his investigation of the pollen mother cell and meristematic tissue of these forms, he concludes that there exist central bodies in the mitotic figure of the fern and flowering plants which are of nuclear origin and are analogous to blepharophlasts.

The following is a brief summary of his account. In very young mother cells of Lilium, Funkia, and Osmunda, chromatin is observed escaping from the nucleus in various spots. Outside the nucleus the chromatin substances increase in size and assume spherical forms. The spherical chromatin substances refract light and close examination of them seems to show a reticulated structure. With stains they react like chromatin and linin. While the chromatin is escaping the nucleolus remains within, which shows that the substances thrown out are not nucleolar. In late prophase the spherical chromatin or "Sphaere" seems loosened and differentiated into two structures, one the center and the other a single heavy beaded fiber. Some of these centers make their way toward the *Hautschicht* during a later phase of mitosis and furnish the anchoring-place for the spindle; some lie scattered in the cytoplasm; and still others remain near the nuclear periphery. To each of these centers there is attached a single heavy beaded fiber, from which there seem to be spun out fine spindle fibers. Generally the spindle figures start as multipolar polyarch, then become bipolar, but remain in the polyarch condition until telophase; and therefore several centers persist without fusion at each pole, each spindle cone being associated with a single center. In rare cases some of these centers fuse together to form a kinoplasmic plate, which is connected by beaded heavy fibers with other centers that remain separate. In telophase the central and mantle spindles again take on a beaded structure. The centers and fibers, instead of entering into the constitution of the organizing daughter nucleus, remain in the cytoplasm and undergo certain changes in the structure. These centers at the pole of the spindle, DERSCHAU thinks, control the mechanism of mitosis. He states further that the centers may be structures allied to the blepharophlast, and are to be regarded as analogous with it, if not homologous; both lie near the nucleus, increase in volume, and mark the starting-point of fibers—one of cilia and the other of spindle fibers.—SHIGÉO YAMANOUCHI.

[12] DERSCHAU, M. v., Beiträge zur pflanzlichen Mitose, Centren, Blepharophlasten. Jahrb. Wiss. Bot. 46:103–118. *pl. 6.* 1908.